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Remarks

Claims 1-7, 19, and 22-26 remain pending in the application. Claims 10 and 14-16 are canceled. Claims 1, 2, 19, 22, 23 and 25 are amended. Claims 27 - 29 are new.

Three provisional terminal disclaimers are filed with this response.

Claim Rejections - 35 U.S.C. §102 (Baldwin)

The Office Action rejects claim 1, 14 and 19 under 35 U.S.C. §102 as being anticipated by Baldwin, Method and Apparatus for Performing Cardio-Pulmonary Resuscitation with Active re-shaping of the Chest, U.S. Patent 5,743,864 (Apr. 28, 1998). The Office Action asserts Baldwin figure 4-6 teach a band attached to a driver mechanism for contracting the band about the chest of a patient; A fluid cushion is disposed between the chest of the patient and the band; and Control system controls the rate and pressure of the system for purposes of CPR. Claims 1 and 19 are amended. The Applicant respectfully traverses the rejection.

Claims 1 and 19 are amended to include, *inter alia*, cushion extending over the sternum of the patient and being limited in the lateral extent to the anterior portion of the patient's thorax. The cavity 32 in Baldwin extends most or all the way around a patient's chest and is not limited in the lateral extent as claimed by the Applicant. Furthermore, a piston is used in Baldwin to perform chest compressions on the sternum during CPR. The purpose of the collar (band) in Baldwin is to restrain the circumference of the thoracic cavity of the patient

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during chest compressions by the piston. (col. 3, lines 9-22). The collar found in Baldwin is manufactured from a non-extensible material that surrounds and conforms to the patient of the chest. (col. 3, lines 7-9). The collar in Baldwin is not contracted as claimed by the Applicant. Contracting may be defined as to reduce in size by drawing together. (*The American Heritage® Dictionary of the English Language, Fourth Edition*). The band claimed by the Applicant may either wind or unwind band, causing the band to be shortened or lengthened. (page 9, lines 27 - 30). Unlike the Applicant, the collar in Baldwin maintains its length during compressions.

Because Baldwin fails to disclose at least one limitation found in the Applicant's claimed invention, Baldwin does not anticipate the Applicant's claimed invention. Therefore, withdrawal of this rejection is respectfully requested.

Claims Rejection - 35 U.S.C. § 103 (Halperin)

The Office Action rejects claim 19, 22, 23 and 25 under 35 U.S.C. §103 as being obvious in view of Halperin, Cardiopulmonary and Assisted Circulation System, U.S. Patent 4,928,674 (May 29, 1990). The Office Action asserts broadly Halperin teaches a band that extends around the chest of a patient; the inflation mechanism is operably connected to the band for contracting the band; as the inflatable band inflates the band will constrict about the chest of the patient; and the band includes the inflatable bladder as a cushion sized and dimensioned to cover substantially the entire anterior portion of the chest including the sternum. The Applicant respectfully traverses the rejection.

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To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaack, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 19 is amended to include, *inter alia*, a cushion extending over the sternum of the patient and being limited in the lateral extent to the anterior portion of the patient's thorax. The mechanism in Halperin '674 does not disclose a cushion extending over the sternum of the patient and being limited in the lateral extent to the anterior portion of the patient's thorax as claimed by the Applicant. Furthermore, Halperin '674 does not contract the band to a tightness sufficient to perform cardiopulmonary resuscitation. The driving mechanism in Halperin cyclically inflates and deflates the bladder. The vest in Halperin is locked into place by the base and a locking mechanism. (Figure 9). Because Halperin '674 fails to teach or suggest at least one limitation found in the Applicant's claimed invention, Halperin '674 does not render obvious the Applicant's claimed invention. Therefore, withdrawal of this rejection is respectfully requested.

The claim limitations of claim 23 and 35 include a driver mechanism, operably connected to the band, for shortening and

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lengthening the band. The driving mechanism in Halperin '674 does not shorten and lengthen the vest (band) as claimed by the Applicant. As stated previously, the driving mechanism in Halperin '674 cyclically inflates and deflates the bladder. The vest in Halperin '674 is locked into place by the base and a locking mechanism. (Figure 9). The size of the vest does not change, but rather the size of the bladder changes in halperin. Because the Applicant claims at least one claim limitation that is not taught or suggested by Halperin '674, the Applicant's claim is non-obvious. Withdrawal of this rejection is requested.

Claims Rejection — 35 U.S.C. § 103 (Schock, Chang and Whitney)

The Office Action rejects claims 2-7, 10, 15 and 16 as being obvious over Shock et al., Active Compression/Decompression Cardiac Assist/Support Device and Method, U.S. Patent 5,490,820 (Feb. 13, 1996) in view of Chang, Method and Apparatus for Applying High Frequency Extrathoracic Induced Breathing, Canadian Patent 1,225,889 (Aug. 25, 1987) and Whitney, Medical Apparatus, US Patent 4,453,538 (Jun. 12, 1984). The Office Action asserts, *inter alia*, that providing a cushion between the constricting members and the chest would have been an obvious provision in view of Whitney. The Applicant respectfully traverses this rejection.

The Applicant's claim 2 limitations include a cushion adapted to translate to the patient's chest an amount of force sufficient to perform cardiopulmonary resuscitation disposed between the chest of the patient and the band, said cushion extending over the sternum of the patient and being limited in the lateral extent to the anterior portion of the patient's

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thorax. Schock discloses two or more thoracic compressors that can be surrounded by a rigidifying vest. Schock fails to disclose a cushion adapted to translate to the patient's chest an amount of force sufficient to perform cardiopulmonary resuscitation disposed between the chest of the patient and the band. As stated in the Applicant's specification, chest compression can be further augmented by placing a cushion between the band and the chest. (Specification page 18, lines 19 - 30) The cushion helps translate forces created by the band to create a concentration of radial forces primarily at the anterior portion of the chest. *supra*. Use of the cushion as disclosed and claimed by the applicant provides unexpected and superior results not disclosed or suggested in Schock.

Neither Chang nor Whitney alone or in combination disclose a cushion extending over the sternum of the patient and being limited in the lateral extent to the anterior portion of the patient's thorax to translate an amount of force sufficient to perform CPR. There is no cushion found in Chang or Whitney disposed over the sternum of the patient. Furthermore, the cushion found in Whitney is not adapted to translate force sufficient to perform CPR. The cushion found in Whitney is to provide comfort. The cushion in Whitney is for a different purpose requiring different properties than those required by the Applicant. The Applicant's claim limitations distinguish its cushion requirements from that of Whitney.

Whitney and Chang are not directed towards CPR devices. The Whitney device is directed towards the treatment of deep venous thrombosis in limbs. Whitney's controller is not programmed to control the driver mechanism to inflate the fluid-receiving cells at a rate sufficient to perform cardiopulmonary

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resuscitation or shorten and lengthen the band to a tightness sufficient to perform cardiopulmonary resuscitation. The length of the Applicant's band is reduced when the cells are inflated. The system in Chang is designed to assist breathing on a living patient. (page 3, lines 6-16). Chang assists the normal breathing patterns of a patient having various respiratory diseases. (page 1, lines 29-31). Chang does not disclose or suggest performing cardiopulmonary resuscitation. CPR is performed on someone who is not living. Nothing can be found in Whitney or Chang to suggest their combination could successfully perform CPR. There is no mention of CPR in either specification.

A combination device of Schock, Chang and Whitney would be unable to perform CPR as claimed by the Applicant since there is no cushion found in any reference that is placed over the sternum of the patient. Any cushion disclosed could not translate an adequate amount of force sufficient to perform CPR as claimed by the Applicant. For at least the reasons stated above, withdrawal of the rejection is respectfully requested.

Claims Rejection — 35 U.S.C. § 103 (Kelly)

Claims 23, 25 and 26 are rejected under 35 U.S.C. §103 as being obvious in view of Kelly, Chest Compression Apparatus for Cardiac Arrest, 5,738,637 (Apr. 14, 1998) under the assertion that Kelly broadly teaches a band and a driver-translating mechanism disposed between the chest of a patient and the band for translating forces from the band to the sternum of the patient. Figure 9 teaches a computer control mechanism for automatically controlling the device. Claim 23 is amended.

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Claims 25 and 26 depend from claim 23. The Applicant respectfully traverses the rejection.

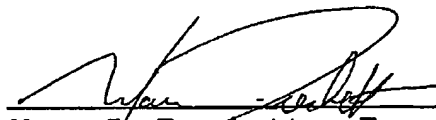
In amended claim 23, the Applicant claims a band adapted to extend around the chest of the patient. The chest is characterized by the sternum of the patient and areas lateral to the sternum. (see claim 23 preamble). Kelly does not teach or suggest a band having a continuous portion extending over the sternum of the patient. The Applicant also claims a cushion disposed between the band and the patient's chest. Kelly does not teach to dispose a cushion between the band and the chest. The translating mechanism in Kelly is disposed between a rod and a chest. Since the Applicant claims at least one claim limitation not taught or suggested by Kelly, the Applicant's claim is not obvious. Therefore, withdrawal of this rejection is respectfully requested.

Conclusion

This response has addressed all of the Examiner's grounds for rejection. The rejections based on prior art have been traversed. Reconsideration of the rejections and allowance of the claims is requested.

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